



**U.S. Department of Energy  
Technical Qualification Program**

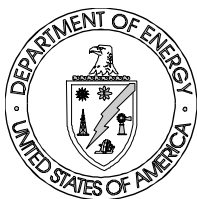
# ***Occupational Safety Qualification Standard***

## **Study Guide**

**For the**

***Nuclear Explosives  
Qualification Standard***

**April 1996**



## Section 5.0

**Competency 2.11** Nuclear Explosives safety personnel shall demonstrate a familiarity level knowledge of the following Department of Energy directives:

- DOE Order 5483.1A, Occupational Safety and Health Program for DOE contractor Employees at Government-Owned Contractor-Operated Facilities
- DOE Order 5480.11, Radiation Protection of the Public and the Environment
- DOE/EV/06194, DOE Explosive Safety Manual

### 1. Supporting Knowledge and Skills

- a. Describe the purpose, scope, and application of the above Department directives with respect to worker safety and health in nuclear explosive operations and associated activities and facilities.
- b. Discuss the relationship that exists between the above directives and DOE Order 5610.11, Safety of Nuclear Explosive Operations.

### 2. Self-Study Activities (corresponding to the intent of the above competency)

- NOTES:
- The DOE Orders are in a state of transition. Please refer to the following gopher site for a cross reference of new and old Orders:  
gopher://VM1.HQADMIN.DOE.GOV:70/00/doemenu1/directiv/251cross.asc
  - Below are three web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	<a href="http://cted.inel.gov/cted/index.html">http://cted.inel.gov/cted/index.html</a>	DOE Standards, Guides, and Orders.
OSHA	<a href="http://www.osha-slc.gov/">http://www.osha-slc.gov/</a>	OSHA documents and search engine
U.S. House of Representatives	<a href="http://law.house.gov/cfr.htm">http://law.house.gov/cfr.htm</a>	Searchable Code of Federal Regulations

**Read** DOE Order 5483.1A, *Occupational Safety and Health Program for DOE contractor*



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*Employees at Government-Owned Contractor-Operated Facilities, and DOE Order 5480.11, Radiation Protection of the Public and the Environment.*

**Scan** DOE/EV/06194, *DOE Explosive Safety Manual*.

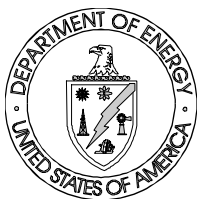
EXERCISE 2.11-A Describe the purpose, scope, and application of the above Department directives.

EXERCISE 2.11-B Discuss the relationship that exists between the above directives.

### **3. Summary**

Explosives present a potentially significant hazard to the public and DOE personnel if they are not handled and transported safely. Therefore, significant restrictions exist for the manufacture, storage, use, transportation, and disposal of explosives, and several agencies have regulations governing them. As a general rule, the key is to minimize the quantities of explosives and the personnel exposed to them while maximizing the distances from the danger and the escape options.

DOE adopted the hazard classification system recommended by the United Nations Organization (UNO), which defines types and severities of hazards for explosives. This system consists of nine classes for dangerous goods, with explosives in Class 1. This class further subdivides into divisions based on the character and predominance of the associated hazards, and the predominance of the associated hazards.

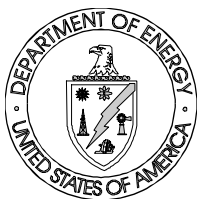


#### 4. Exercise Solutions

EXERCISE 2.11-A Describe the purpose, scope, and application of the above Department directives.

ANSWER 2.11-A

Directives Related to Nuclear Explosives Safety Competency 2.11		
Directive	Purpose	Scope
<b>5483.1A</b> <i>Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities</i>	To establish requirements and procedures to assure that occupational safety and health standards prescribed pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and the Department of Energy Organization Act of 1977, provide occupational safety and health protection for Department of Energy (DOE) contractor employees in Government-owned contractor-operated (GOCO) facilities which is consistent with the protection afforded private industry employees by the occupational safety and health standards promulgated under the Occupational Safety and Health Act of 1970 (OSHA), Public Law 91-596.	The provisions of this Order apply to all elements of DOE and to DOE contractors whose contracts include the occupational safety and health contract clause specified in DOE Procurement Regulation (PR) 9-50.704-2(a). The provisions of this Order apply only with respect to radiation hazards in the workplace to DOE contractors whose contracts include the radiation protection contract clause specified in DOE PR 9-50.704-2(b).
<b>5480.11</b> <i>Radiation Protection of the Public and the Environment</i>	To establish radiation protection standards and program requirements for the Department of Energy (DOE) and DOE contractor operations with respect to the protection of the worker from ionizing radiation.	The provisions of this Order apply to all Departmental Elements and contractors performing work for the Department as provided by law and/or contract and as implemented by the appropriate contracting officer.



## Section 5.0

Directives Related to Nuclear Explosives Safety Competency 2.11		
Directive	Purpose	Scope
<b>DOE/EV/06194</b> <i>DOE Explosive Safety Manual</i>	This manual prescribes the Department of Energy (DOE) safety rules used to implement the DOE safety policy for operations involving explosives.	This manual is applicable to all DOE facilities engaged in operations of development, manufacturing, handling, storage, transportation, processing, or testing of explosives, pyrotechnics, and propellants, or assemblies containing these materials.
<b>5610.11</b> <i>Nuclear Explosive Safety</i>	To establish the Department of Energy (DOE) policy, procedures, authorities, and responsibilities for assuring the safe conduct of nuclear explosive activities under the Department's Nuclear Explosive and Weapon Safety Program.	This Order applies to DOE Headquarters and field elements and its contractors and subcontractors that conduct activities involving nuclear explosive in support of the nuclear weapons program as provided by law and/or contract and as implemented by the appropriate contracting officer.

EXERCISE 2.11-B Discuss the relationship that exists between the above directives.

ANSWER 2.11-B DOE 5610.11, *Nuclear Explosive Safety* addresses the particular hazards presented by nuclear explosives and therefore expands on the more general information in the other directives. DOE/EV/06194, *DOE Explosive Safety Manual* offers detailed guidelines and procedures for manufacturing, testing, storage, transportation and other matters involving conventional explosives.